

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method for a computerized analysis of a mammogram in digital form of a breast of a patient, comprising:

extracting from a selected region of interest in the mammogram, plural surface areas or volumes calculated ~~fractal-based features~~ at multiple corresponding plural scales associated with a texture of a parenchyma of the breast;

applying said plural surface areas or volumes directly as inputs ~~fractal-based features~~ to at least one of a linear discriminant classifier and an artificial neural network classifier; and
generating a risk marker indicative of a breast disease risk for said patient based on an output of the at least one of a linear discriminant classifier and an artificial neural network classifier.

2-3. (Canceled)

4. (Currently Amended) The method according to Claim 1, wherein the extracting step comprises:

extracting the plural ~~fractal-based features~~ surface areas from an area of the ~~the~~ [[a]] region of interest of the mammogram based on a box-counting method.

5. (Currently Amended) The method according to Claim 1, wherein the extracting step comprises:

extracting the plural ~~fractal-based features~~ volumes from a volume of [[a]] the region of interest of the mammogram based on a general Minkowski model.

6. (Previously Presented) The method according to Claim 1, wherein the applying step comprises:

applying the features to a linear discriminant analysis classifier.

7. (Previously Presented) The method according to Claim 1, wherein the applying step comprises:

applying the features to an artificial neural network classifier.

8-9. (Canceled)

10. (Previously Presented) The method according to Claim 1, wherein the extracting step comprises:

extracting from the mammogram a multi-fractal characteristic associated with the texture of the parenchyma of the breast.

11. (Currently Amended) A system for computerized analysis of a mammogram in digital form of a breast of a patient, comprising:

a feature extraction mechanism that extracts, from a selected region of interest in the mammogram, plural surface areas or volumes calculated at corresponding plural fractal-based features at multiple scales associated with a texture of a parenchyma of the breast;

a classifier mechanism including at least one of a linear discriminant classifier and an artificial neural network to which the plural ~~fractal-based features~~ surface areas or volumes are directly applied as inputs; and

a risk marker generator that generates a risk marker indicative of a breast disease risk for said patient based on an output of the classifier mechanism.

12-13. (Canceled)

14. (Currently Amended) The system according to Claim 11, wherein the feature extraction mechanism extracts the plural ~~fractal-based features~~ surface areas from an area of ~~the~~ the region of interest of the mammogram based on a box-counting method.

15. (Currently Amended) The system according to Claim 11, wherein the feature extraction mechanism extracts the plural ~~fractal-based features~~ volumes from a volume of ~~the~~ the region of interest of the mammogram based on a general Minkowski model.

16. (Previously Presented) The system according to Claim 11, wherein the classifier mechanism comprises a linear discriminant analysis classifier.

17. (Previously Presented). The system according to Claim 11, wherein the classifier mechanism comprises an artificial neural network classifier.

18-19. (Canceled)

20. (Previously Presented) The system according to Claim 11, wherein the feature extraction mechanism extracts from the mammogram a multi-fractal characteristic associated with the texture of the parenchyma of the breast.

21. (Currently Amended) A computer readable medium storing instructions for execution on a computer system, which when executed by the computer system, causes the

computer system to perform a method for a computerized analysis of a mammogram in digital form of a breast of a patient, comprising the steps of:

extracting from a selected region of interest in the mammogram, plural surface areas or volumes calculated ~~fractal-based features at multiple corresponding plural scales~~ associated with a texture of a parenchyma of the breast;

applying said plural ~~fractal-based features~~ surface areas or volumes directly as inputs to at least one of a linear discriminant classifier and an artificial neural network classifier; and
generating a risk marker indicative of a breast disease risk for said patient based on an output of the at least one of a linear discriminant classifier and an artificial neural network classifier.

22-23. (Canceled)

24. (Currently Amended) The computer readable medium according to Claim 21, wherein the extracting step comprises:

extracting the plural ~~fractal-based features~~ surface areas from an area of ~~[[a]]~~ the region of interest of the mammogram based on a box-counting method.

25. (Currently Amended) The computer readable medium according to Claim 21, wherein the extracting step comprises:

extracting the plural ~~fractal-based features~~ volumes from a volume of ~~[[a]]~~ the region of interest of the mammogram based on a general Minkowski model.

26. (Previously Presented) The computer readable medium according to Claim 21, wherein the applying step comprises:

applying the features to a linear discriminant analysis classifier.

27. (Previously Presented) The computer readable medium according to Claim 21, wherein the applying step comprises:

applying the features to an artificial neural network classifier.

28-29. (Canceled)

30. (Previously Presented) The computer readable medium according to Claim 21, wherein the extracting step comprises:

extracting from the mammogram a multi-fractal characteristic associated with the texture of the parenchyma of the breast.